

FCC

EMC

TEST REPORT

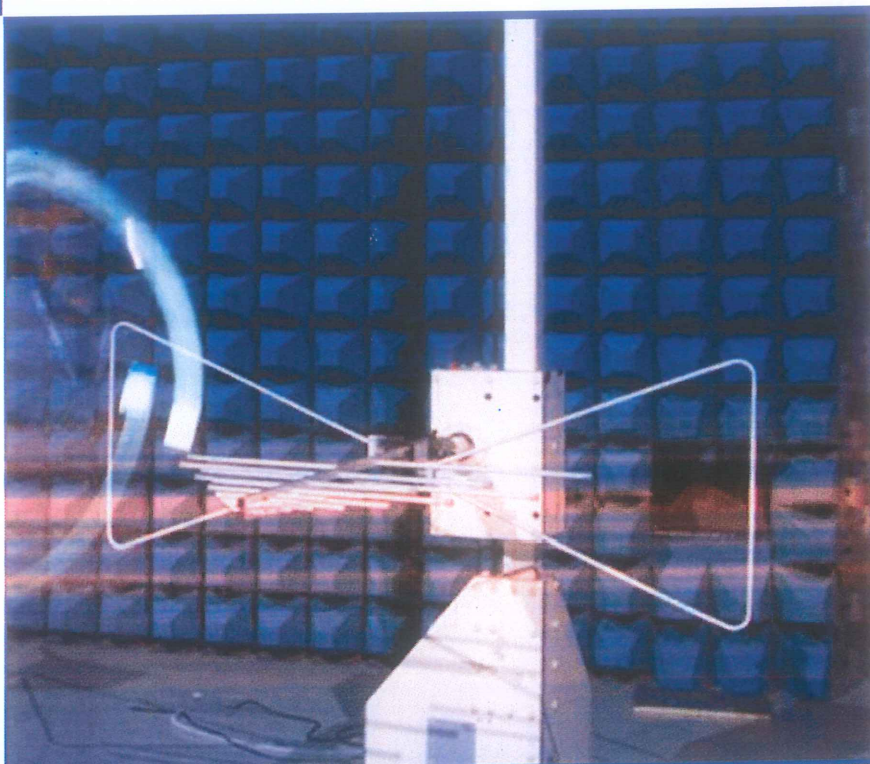
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
OTT STB V3

ISSUED TO
SHENZHEN COSHIP ELECTRONICS CO., LTD.

A6 Floor, Rainbow Building, 5th Zone, North, Hi-tech Industrial Park,
Nanshan District, Shenzhen, China



Tested by: Xia Long
Xia Long

(Engineer)

Date: May 19, 2017

Approved by: Wei Yanquan
Wei Yanquan

(Chief Engineer)

Date: May 19, 2017

Report No.: BL-SZ1740210-401

EUT Name: OTT STB V3

Model Name: N9090

Brand Name: COSHIP

Test Standard: 47 CFR Part 15 Subpart B

FCC ID: 2AL2ON9090

Test Conclusion: Pass

Test Date: Apr. 21, 2017 ~ Apr. 24, 2017

Date of Issue: May 19, 2017

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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>May 19, 2017</u>	<u>Initial Issue</u>

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	<p>The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1.</p> <p>The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625.</p> <p>The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.</p>
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20°C~25°C
Ambient Relative Humidity	45% - 55%
Ambient Pressure	100 kPa - 102 kPa

1.4 Announce

- (1) The test report reference to the report template version v6.4.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	SHENZHEN COSHIP ELECTRONICS CO., LTD.
Address	A6 Floor, Rainbow Building, 5th Zone, North, Hi-tech Industrial Park, Nanshan District, Shenzhen, China

2.2 Manufacturer Information

Manufacturer	SHENZHEN COSHIP ELECTRONICS CO., LTD.
Address	A6 Floor, Rainbow Building, 5th Zone, North, Hi-tech Industrial Park, Nanshan District, Shenzhen, China

2.3 Factory Information

Factory	Nantong Coship Electronics Co., Ltd.
Address	No. 188, Xincheng Road, Nantong, China

2.4 General Description for Equipment under Test (EUT)

EUT Name	OTT STB V3
Model Name Under Test	N9090
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	YMB.A346.C
Software Version	N9090.100.001, N9090. XXX. YYY("XXX.YYY" will not change the radio frequency parameters, "XXX" stands for the version of software, start from 100, 101, 102....., it's used for checking software version on the network, and trigger the upgrading process. "YYY" stands for the serial number of code modify, start from 001, 002....., it's used for engineer to locate the detail modify point of code. And the update on XXX. YYY will not change the radio frequency conformance of this produce.)
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A
Network and Wireless connectivity	WIFI

2.5 Ancillary Equipment

Ancillary Equipment 1	Adapter 1	
	Brand Name	MASS
	Model No.	NBS12E050150VU (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.3 A, 50/60 Hz
	Rated Output	5 V=, 1.5 A
Ancillary Equipment 2	Adapter 2	
	Brand Name	N/A
	Model No.	RJ-AS050150U003-A (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5 V=, 1.5 A
Ancillary Equipment 3	Adapter 3	
	Brand Name	DVE
	Model No.	DSA-12PFU-05 FUS 050150 (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5 V=, 1.5 A
Ancillary Equipment 4	Remote Control	

2.6 Technical Information

Note: Not Application.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	FCC 47 CFR Part 15 Subpart B (10-1-15 Edition)	Unintentional Radiators
2	ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low- Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

3.2 Verdict

No.	Description	FCC Rule	Test Verdict	Result
1	Radiated Emission	15.109	Pass	Annex A .1
2	Conducted Emission, AC Ports	15.107	Pass	Annex A .2

3.3 Test Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Conducted emissions (9 kHz-30 MHz)	3.23 dB
Radiated emissions (30 MHz-1 GHz)	4.30 dB
Radiated emissions (1 GHz-18 GHz)	4.81 dB
Radiated emissions (18 GHz-40 GHz)	5.71 dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

Environment Parameter	Selected Values During Tests			
	Temperature	Voltage	Relative Humidity	Ambient Pressure
Normal Temperature, Normal Voltage (NTNV)	23°C~26°C	AC 120 V/60 Hz	50%-55%	100 to 102 kPa

4.2 Test Equipment List

Radiated Emission Test For Frequency Below 1 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWA RZ	ESRP	101036	2016.07.05	2017.07.04	<input checked="" type="checkbox"/>
Test Antenna- Bi-Log	SCHWARZBECK	VULB 9163	9163-977	2016.07.19	2018.07.18	<input checked="" type="checkbox"/>
Test Antenna- Horn	SCHWARZBECK	BBHA 9120D	9120D-1600	2016.07.12	2018.07.11	<input type="checkbox"/>
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	N/A	2016.08.09	2018.08.08	<input checked="" type="checkbox"/>

Radiated Emission Test For Frequency Above 1 GHz						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2016.09.09	2017.09.08	<input checked="" type="checkbox"/>
Test Antenna- Bi-Log	SCHWARZBECK	VULB 9163	9163-624	2015.07.22	2017.07.21	<input type="checkbox"/>
Test Antenna- Horn	SCHWARZBECK	BBHA 9120D	9120D-1148	2015.07.22	2017.07.21	<input checked="" type="checkbox"/>
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2019.02.20	<input checked="" type="checkbox"/>

Conducted Emission Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWA RZ	ESRP	101036	2016.07.05	2017.07.04	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NSLK 8127	8127-687	2016.07.05	2017.07.04	<input checked="" type="checkbox"/>
LISN	SCHWARZBECK	NNLK 8129	8129-462	2016.09.14	2017.09.13	<input type="checkbox"/>
AMN	SCHWARZBECK	NNBM8124	8124-509	2016.07.05	2017.07.04	<input type="checkbox"/>
AMN	SCHWARZBECK	NNBM8124	8124-510	2016.07.05	2017.07.04	<input type="checkbox"/>
ISN	TESEQ	ISN T800	34449	2016.07.05	2017.07.04	<input type="checkbox"/>
Shielded Enclosure	ChangNing	CN-130701	130703	N/A	N/A	<input checked="" type="checkbox"/>

4.3 Test Enclosure list

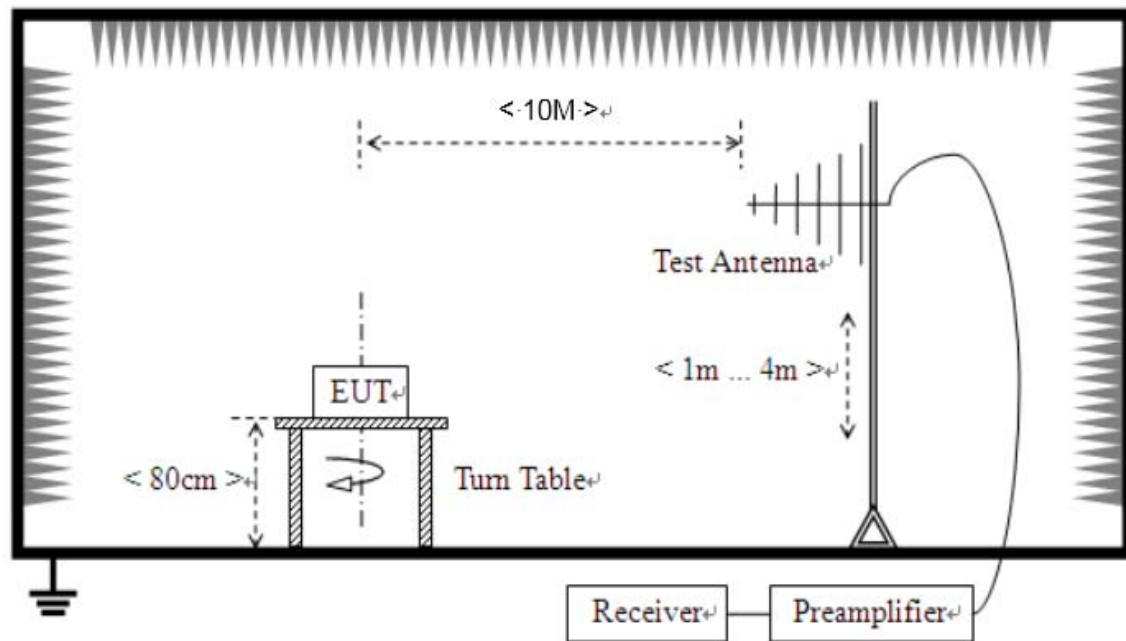
Description	Manufacturer	Model	Serial No.	Length	Description	Use
PC	Dell	015K3N	N/A	N/A	Special Handled	<input type="checkbox"/>
Laptop	Lenovo	E31-80	R3026PU9	N/A	N/A	<input checked="" type="checkbox"/>
Printer	HP	DESKJET 1000	N/A	N/A	N/A	<input type="checkbox"/>
Keyboard	Logitech	Y-BP62a	N/A	N/A	N/A	<input type="checkbox"/>
Mouse	Logitech	M100	N/A	N/A	N/A	<input type="checkbox"/>
USB Disk	Kingston	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>
TF Card	Kingston	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>
VGA Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
HDMI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input checked="" type="checkbox"/>
DVI Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
Coaxial video cable	N/A	N/A	N/A	2.0 m	Shielded with core	<input type="checkbox"/>
iPhone	Apple	A1586	N/A	N/A	N/A	<input type="checkbox"/>
Phone	MI	M4	N/A	N/A	N/A	<input type="checkbox"/>
Bluetooth Earphone	SAMSUNG	Gear Circle	N/A	N/A	N/A	<input type="checkbox"/>
GPS/GLONASS Vector signal generator	R&S	N5172B EXG	N/A	N/A	N/A	<input type="checkbox"/>
WIFI Router	TP-LINK	TL-WDR7500	N/A	N/A	N/A	<input checked="" type="checkbox"/>
Earphone	N/A	OPPO	N/A	1.1 m	N/A	<input checked="" type="checkbox"/>
Car Battery	Camel	55530	N/A	N/A	12 V/55 Ah	<input type="checkbox"/>
Artificial load	N/A	N/A	N/A	N/A	2.5 Ω /100 W	<input type="checkbox"/>
Artificial load	N/A	N/A	N/A	N/A	5 Ω /100 W	<input type="checkbox"/>
Electronic Load	ITECH	IT8511	N/A	N/A	N/A	<input type="checkbox"/>
USB Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input type="checkbox"/>
DC Power Supply	ITECH	IT6863A	60001401068 7210006	N/A	N/A	<input type="checkbox"/>
LCD Monitor	SAMSUNG	UA32C4000P	N/A	N/A	N/A	<input type="checkbox"/>
LCD Monitor	Dell	U241HB	N/A	N/A	N/A	<input checked="" type="checkbox"/>
RJ45 Cable	N/A	N/A	N/A	1.5 m	Shielded with core	<input checked="" type="checkbox"/>

4.4 Test Configurations

Test Configurations (TC) No.	Description
TC01	<u>The USB 1 Test Mode</u> EUT + Adapter + Remote Control + USB Disk + Earphone + HDMI Cable + LCD Monitor + Laptop + RJ45 Cable + WIFI Link
TC02	<u>The USB 2 Test Mode</u> EUT + Adapter + Remote Control + USB Disk + Earphone + HDMI Cable + LCD Monitor + Laptop + RJ45 Cable + WIFI Link
TC03	<u>The TF Card Test Mode</u> EUT + Adapter + Remote Control + TF Card + Earphone + HDMI Cable + LCD Monitor + Laptop + RJ45 Cable + WIFI Link

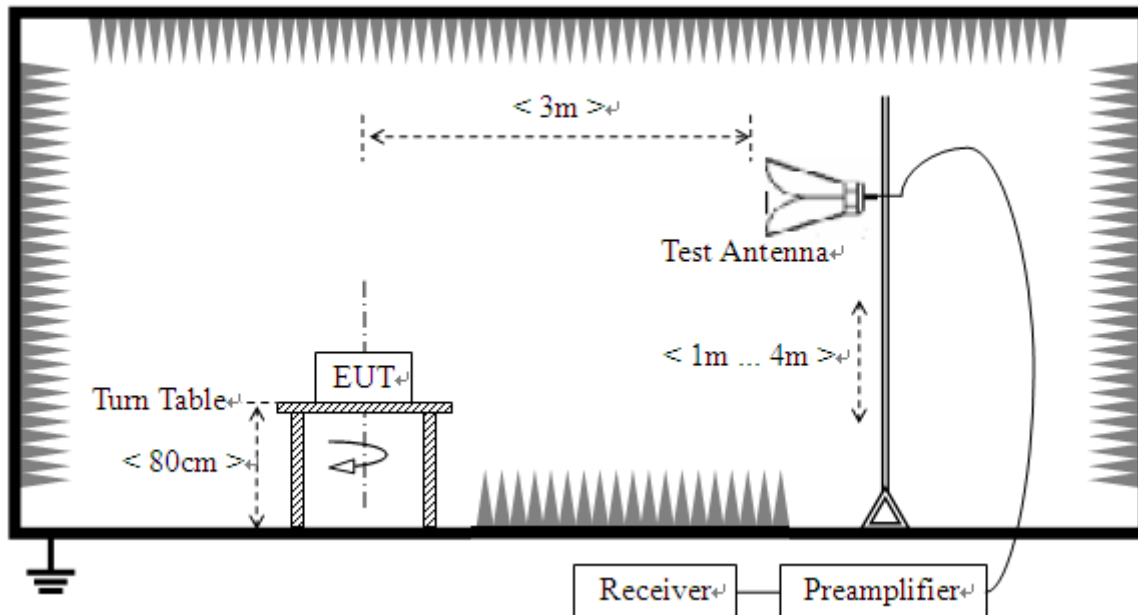
4.5 Test Setups

Test Setup 1



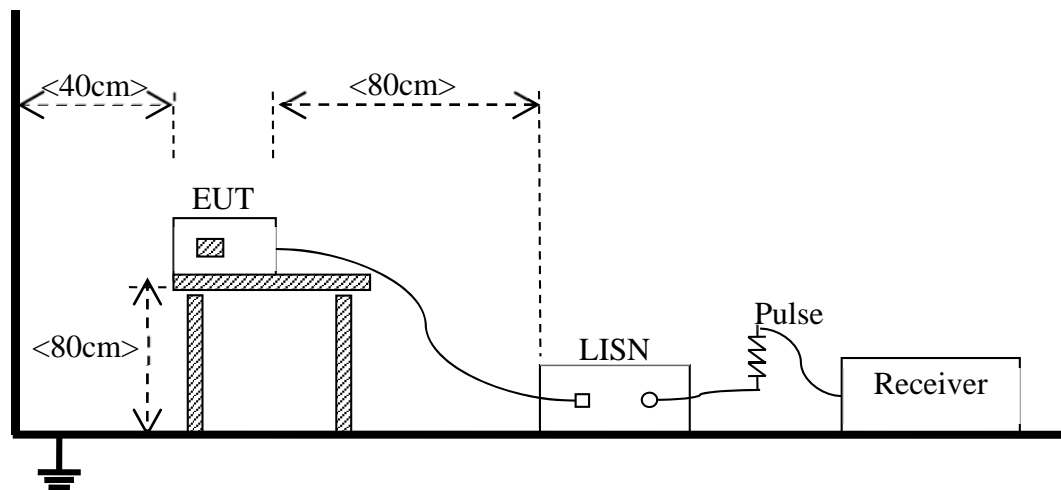
(For Radiated Emission Test (30 MHz-1 GHz))

Test Setup 2



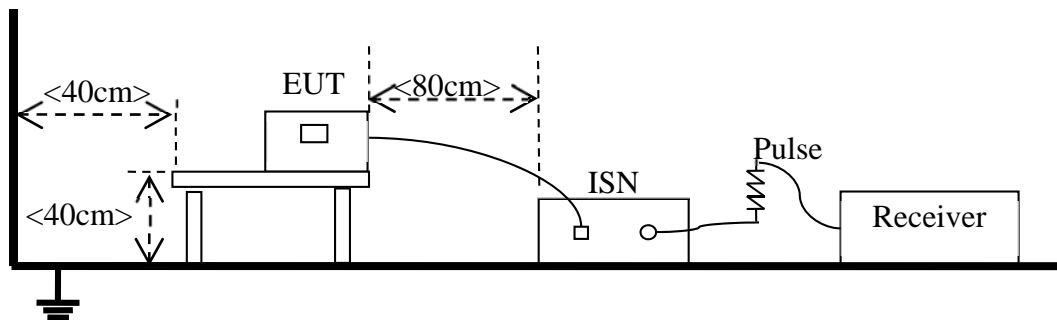
(For Radiated Emission Test (above 1 GHz))

Test Setup 3



(For Conducted Emission, AC Ports Test)

Test Setup 4



(For Conducted Emission for Telecom Ports Test)

4.6 Test Conditions

Test Case	Test Conditions	
Radiated Emission	Test Env.	NTNV
	Test Setup	Test Setup 1&2
	Test Configuration	TC01~TC03 ^{Note}
Conducted Emission	Test Env.	NTNV
	Test Setup	Test Setup 3&4
	Test Configuration	TC01~TC03 ^{Note}
Note: Based on client request, all normal using modes of the normal function were tested but only the worst test data of the worst mode is reported by this report. The USB 1 Test Mode is the worst mode in this report.		

5 TEST ITEMS

5.1 Emission Tests

5.1.1 Radiated Emission

5.1.1.1 Limit

Frequency range (MHz)	Class B (at 10 m)		Class A (at 10 m)	
	Field Strength ($\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)	Field Strength ($\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)
30 - 88	100	30	90	39
88 - 216	150	33.5	150	43.5
216 - 960	200	36	210	46.4
Above 960	500	44	300	49.5

NOTE:

- 1) Field Strength (dB $\mu\text{V/m}$) = $20 \cdot \log [\text{Field Strength } (\mu\text{V/m})]$.
- 2) In the emission tables above, the tighter limit applies at the band edges.

5.1.1.2 Test Setup

Refer to 4.5 section (test setup 1 to test setup 2) for radiated emission test, the photo of test setup please refer to ANNEX B.

5.1.1.3 Test Procedure

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

An initial pre-scan was performed in the chamber using the EMI Receiver in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bi-Log antenna with 2 orthogonal polarities.

5.1.1.4 Test Result

Please refer to ANNEX A.1.

5.1.2 Conducted Emission

5.1.2.1 Test Limit

Frequency range (MHz)	Class A	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 - 0.50	79	66
0.50 - 30	73	60

Frequency range (MHz)	Class B	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- 1) The lower limit shall apply at the band edges.
- 2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50 MHz.

5.1.2.2 Test Setup

Refer to 4.5 section test (test setup 3) for conducted emission, the photo of test setup please refer to ANNEX B.

5.1.2.3 Test Procedure

The EUT is connected to the power mains through a LISN which provides 50 Ω /50 μ H of coupling impedance for the measuring instrument. The test frequency range is from 150 kHz to 30 MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.1.2.4 Test Result

Please refer to ANNEX A.2.

ANNEX A TEST RESULTS

A.1 Radiated Emission

Note 1: The symbol of "--" in the table which means not application.

Note 2: Measurements shall be made with a quasi-peak measuring receiver in the frequency range 30 MHz to 1000 MHz. To reduce the testing time, a peak measuring receiver may be used instead of a quasi-peak measuring receiver. In case of dispute, measurement with a quasi-peak measuring receiver will take precedence.

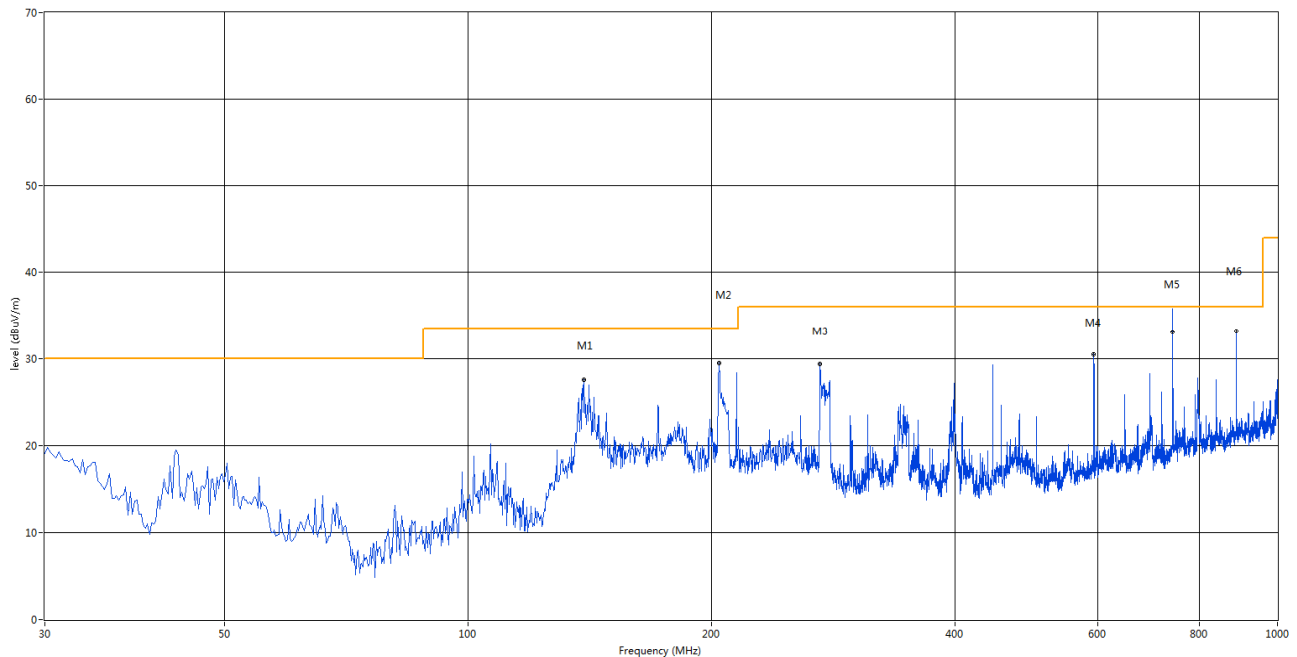
Note 3: The differences of adapters only influence the results of Radiated Emission below 1 GHz, so we only test the model DSA-12PFU-05 FUS 050150 adapter above 1 GHz.

Note 4: The marked spikes near 2400 MHz with circle should be ignored because they are WIFI carrier frequency.

Test Data and Plots (Below 1 GHz)

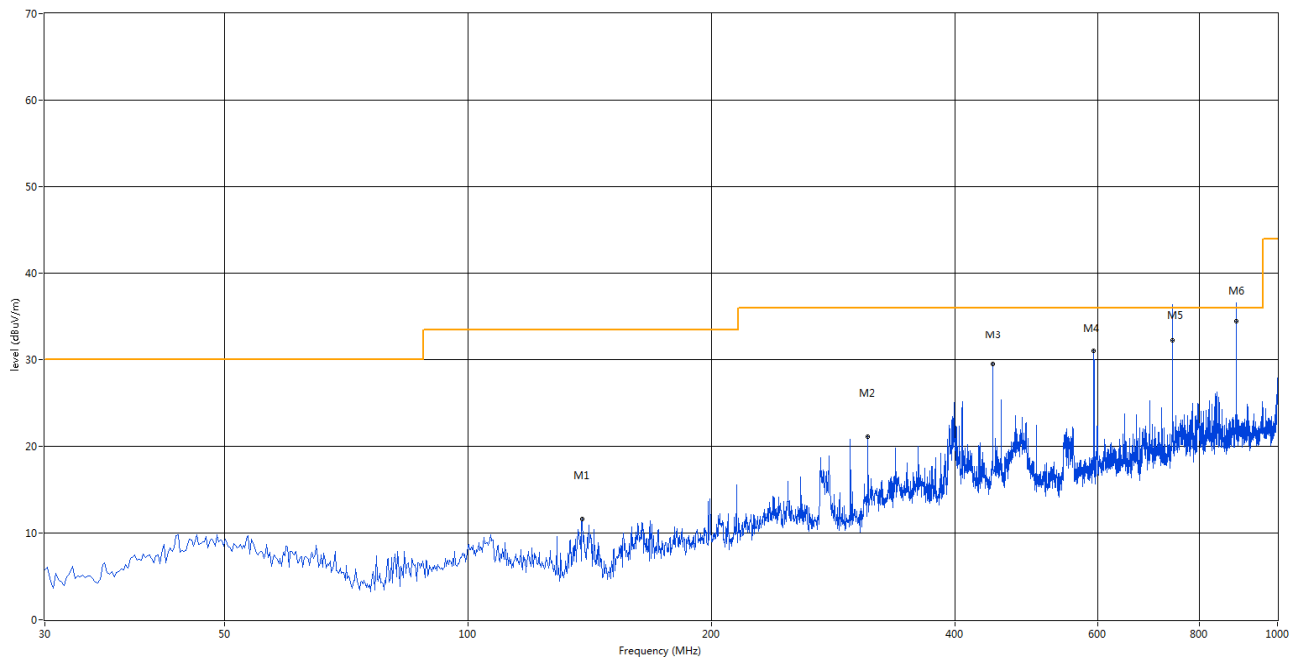
The USB 1 Test Mode (DSA-12PFU-05 FUS 050150)

A.1.1 Test Antenna Vertical, 30 MHz – 1 GHz



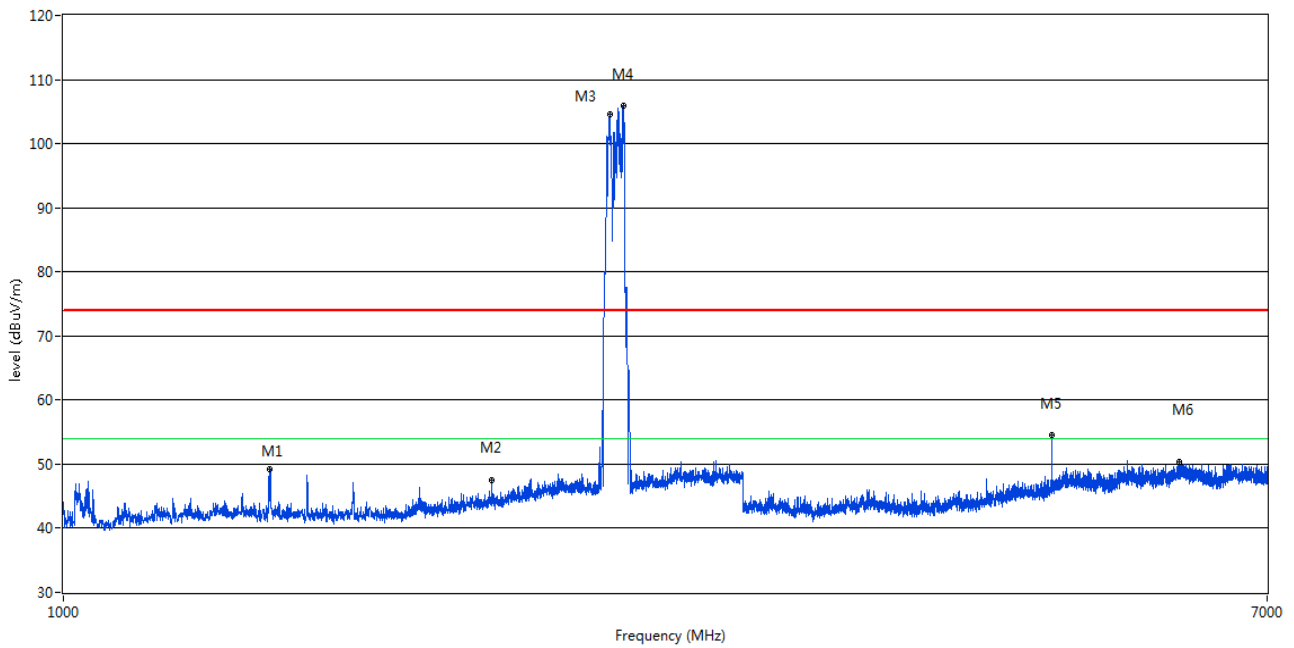
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	139.098	27.55	-18.82	33.5	5.95	Peak	59.00	100	Vertical	Pass
2	204.071	28.90	-14.92	33.5	4.60	Peak	213.00	300	Vertical	Pass
3	272.197	29.30	-13.06	36.0	6.70	Peak	172.00	100	Vertical	Pass
4	593.187	30.49	-5.64	36.0	5.51	Peak	35.00	128.00	Vertical	Pass
5	741.560	35.80	-3.16	36.0	0.20	Peak	131.00	128.00	Vertical	N/A
5*	741.560	33.04	-3.16	36.0	2.96	QP	131.00	130.00	Vertical	Pass
6	889.933	32.88	-1.30	36.0	3.12	Peak	350.00	130.00	Vertical	Pass

A.1.2 Test Antenna Horizontal, 30 MHz – 1 GHz



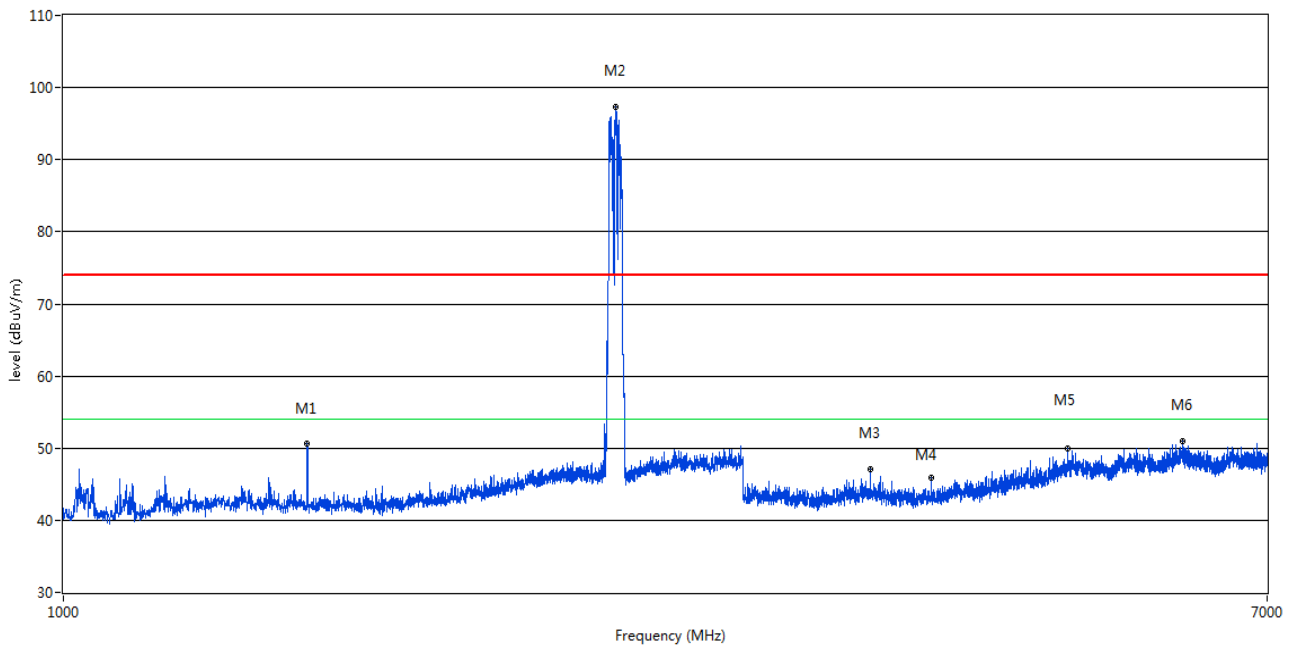
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	138.370	11.65	-18.82	33.5	21.85	Peak	165.00	100	Horizontal	Pass
2	311.957	21.08	-12.07	36.0	14.92	Peak	87.00	100	Horizontal	Pass
3	444.814	29.50	-8.93	36.0	6.50	Peak	264.00	300	Horizontal	Pass
4	593.187	30.94	-5.64	36.0	5.06	Peak	28.00	100	Horizontal	Pass
5	741.560	36.42	-3.16	36.0	-0.42	Peak	203.00	265.00	Horizontal	N/A
5*	741.560	32.14	-3.16	36.0	3.86	QP	203.00	265.00	Horizontal	Pass
6	889.933	36.62	-1.30	36.0	-0.62	Peak	22.00	189.00	Horizontal	N/A
6*	889.933	34.50	-1.30	36.0	1.50	QP	22.00	189.00	Horizontal	Pass

A.1.3 Test Antenna Vertical, 1 GHz – 6 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1397.000	49.13	-6.40	74.0	24.87	Peak	0.90	100	Vertical	Pass
2	1999.000	47.55	-4.73	74.0	26.45	Peak	161.90	100	Vertical	Pass
3	2420.500	104.54	-3.02	74.0	-30.54	Peak	337.70	100	Vertical	N/A
4	2473.500	105.90	-3.35	74.0	-31.90	Peak	199.80	100	Vertical	N/A
5	4944.000	54.53	9.42	74.0	19.47	Peak	187.90	100	Vertical	N/A
6	6070.000	50.36	10.78	74.0	23.64	Peak	338.90	100	Vertical	Pass

A.1.4 Test Antenna Horizontal, 1 GHz – 6 GHz

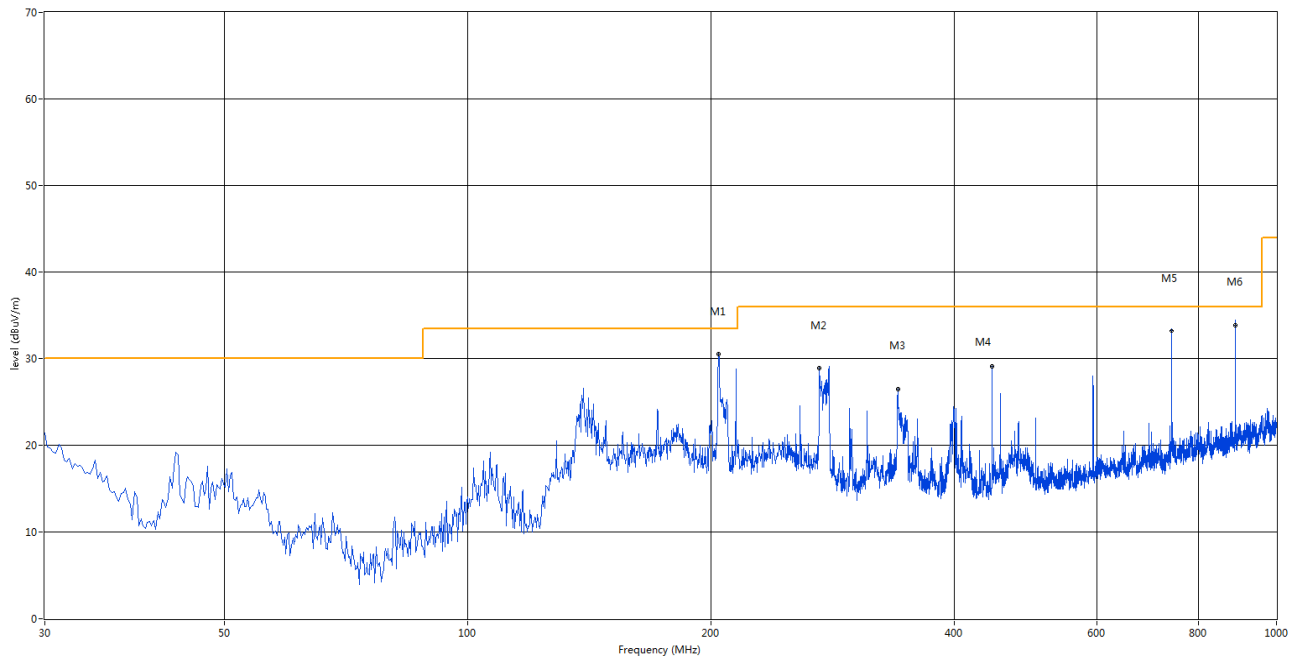


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	1483.000	50.57	-6.58	74.0	23.43	Peak	11.10	100	Horizontal	Pass
2	2443.000	97.39	-3.37	74.0	-23.39	Peak	90.70	100	Horizontal	N/A
3	3684.000	47.08	6.48	74.0	26.92	Peak	210.10	100	Horizontal	Pass
4	4069.000	45.86	7.33	74.0	28.14	Peak	10.10	100	Horizontal	Pass
5	5072.000	49.88	9.62	74.0	24.12	Peak	0.20	100	Horizontal	Pass
6	6104.000	50.99	10.80	74.0	23.01	Peak	79.90	100	Horizontal	Pass

Test Data and Plots (Below 1 GHz)

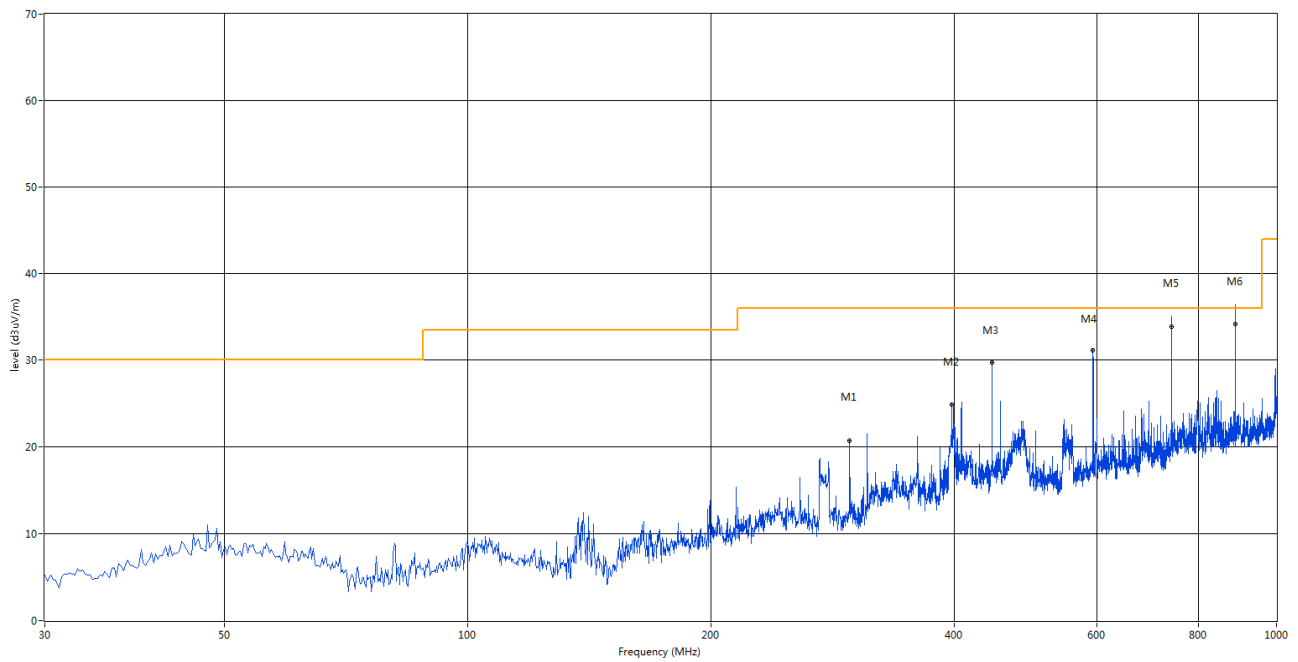
The USB 1 Test Mode (NBS12E050150VU)

A.1.5 Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	204.071	30.46	-14.92	33.5	3.04	Peak	333.00	100	Vertical	Pass
2	272.197	28.83	-13.06	36.0	7.17	Peak	158.00	100	Vertical	Pass
3	340.322	26.47	-10.70	36.0	9.53	Peak	152.00	100	Vertical	Pass
4	444.814	29.01	-8.93	36.0	6.99	Peak	148.00	100	Vertical	Pass
5	741.560	33.50	-3.16	36.0	2.50	Peak	18.00	251.00	Vertical	N/A
5*	741.560	33.14	-3.16	36.0	2.86	QP	18.00	251.00	Vertical	Pass
6	889.933	34.50	-1.30	36.0	1.50	Peak	347.00	123.00	Vertical	N/A
6*	889.933	33.90	-1.30	36.0	2.10	QP	347.00	123.00	Vertical	Pass

A.1.6 Test Antenna Horizontal, 30 MHz – 1 GHz

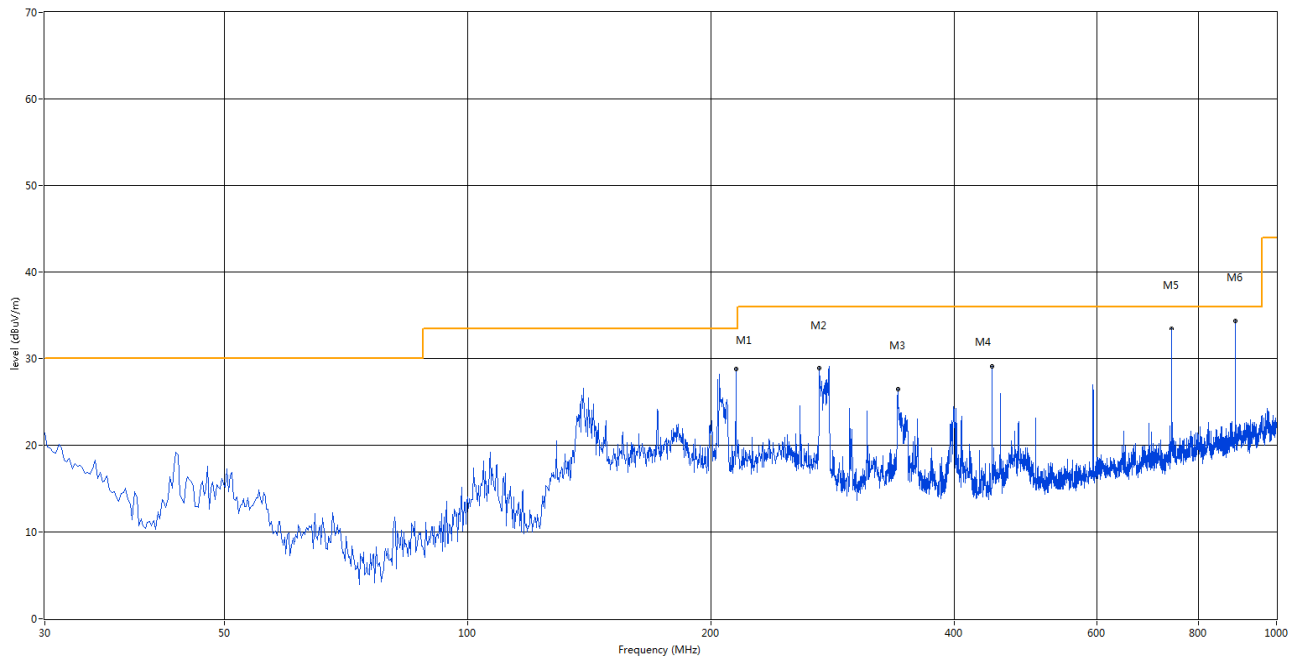


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	296.683	20.71	-12.47	36.0	15.29	Peak	318.00	100	Horizontal	Pass
2	396.811	24.80	-9.74	36.0	11.20	Peak	85.00	100	Horizontal	Pass
3	444.814	29.63	-8.93	36.0	6.37	Peak	273.00	100	Horizontal	Pass
4	593.187	31.06	-5.64	36.0	4.94	Peak	24.00	100	Horizontal	Pass
5	741.560	34.66	-3.16	36.0	1.34	Peak	137.00	123.00	Horizontal	N/A
5*	741.560	33.94	-3.16	36.0	2.06	QP	137.00	123.00	Horizontal	Pass
6	889.933	36.39	-1.30	36.0	-0.39	Peak	20.00	181.00	Horizontal	N/A
6*	889.933	34.20	-1.30	36.0	1.80	QP	20.00	181.00	Horizontal	Pass

Test Data and Plots (Below 1 GHz)

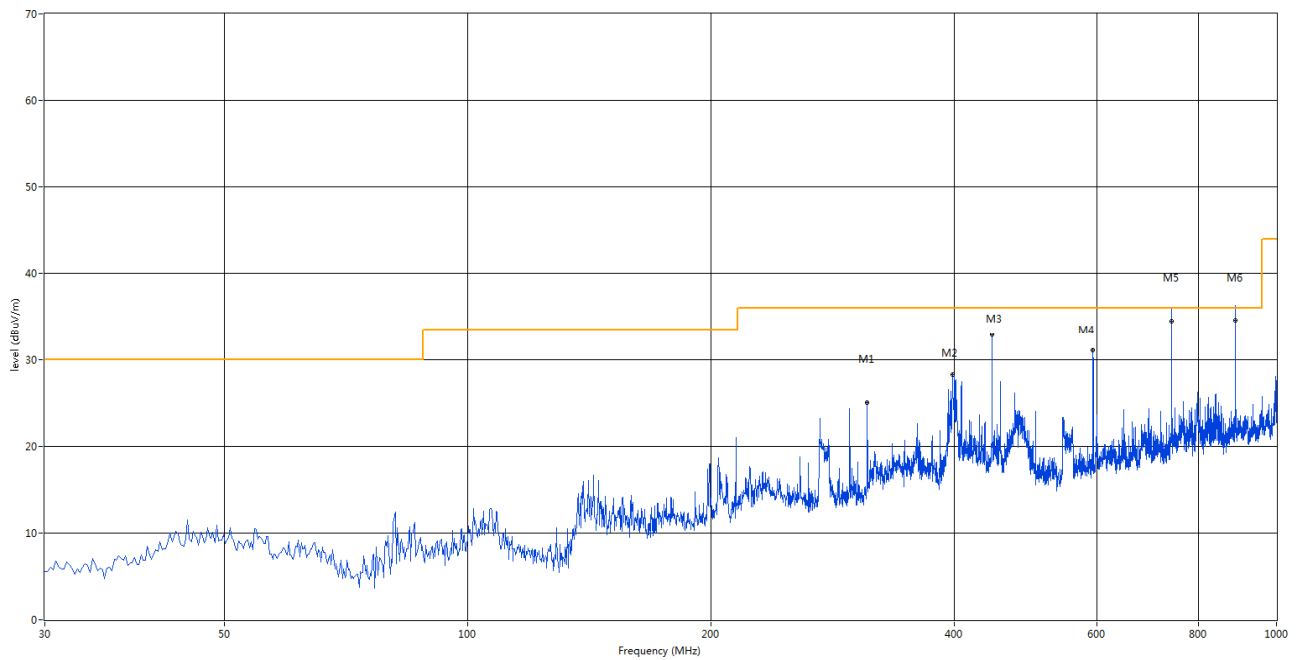
The USB 1 Test Mode (RJ-AS0505150U003-A)

A.1.7 Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	214.739	28.76	-15.06	33.5	4.74	Peak	215.00	100	Vertical	Pass
2	272.197	28.83	-13.06	36.0	7.17	Peak	158.00	200	Vertical	Pass
3	340.322	26.47	-10.70	36.0	9.53	Peak	152.00	200	Vertical	Pass
4	444.814	29.01	-8.93	36.0	6.99	Peak	148.00	100	Vertical	Pass
5	741.560	31.50	-3.16	36.0	4.50	Peak	360.00	100	Vertical	Pass
6	889.933	34.50	-1.30	36.0	1.50	Peak	6.00	262.00	Vertical	N/A
6*	889.933	34.36	-1.30	36.0	1.64	QP	6.00	262.00	Vertical	Pass

A.1.8 Test Antenna Horizontal, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	311.957	25.05	-12.07	36.0	10.95	Peak	301.00	200	Horizontal	Pass
2	397.538	28.21	-9.75	36.0	7.79	Peak	300.00	200	Horizontal	Pass
3	444.814	30.84	-8.93	36.0	5.16	Peak	230.00	100	Horizontal	Pass
4	593.187	30.57	-5.64	36.0	5.43	Peak	180.00	100	Horizontal	Pass
5	741.560	35.54	-3.16	36.0	0.46	Peak	360.00	138.00	Horizontal	Pass
5*	741.560	34.54	-3.16	36.0	1.46	QP	360.00	138.00	Horizontal	Pass
6	889.933	36.28	-1.30	36.0	-0.28	Peak	360.00	283.00	Horizontal	N/A
6*	889.933	34.60	-1.30	36.0	1.40	QP	360.00	283.00	Horizontal	Pass

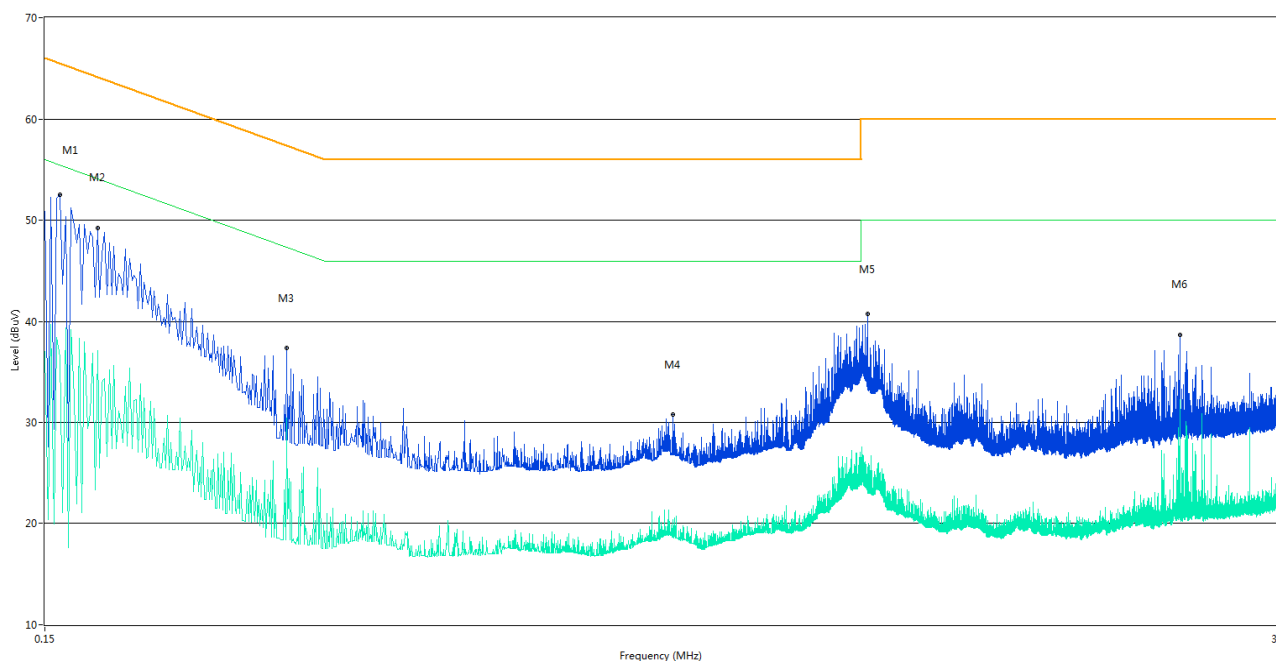
A.2 Conducted Emission

Test Data and Plots

The USB 1 Test Mode (DSA-12PFU-05 FUS 050150)

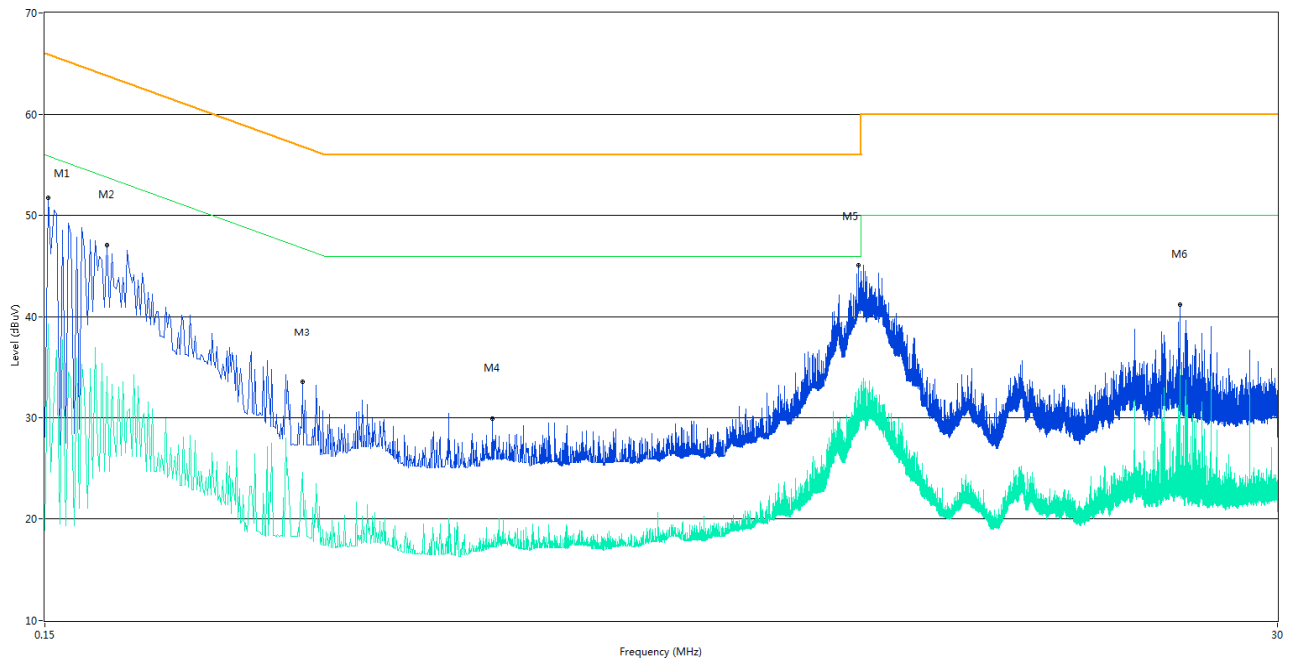
Note: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

A.2.1 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.160	52.5	10.29	65.5	13.00	Peak	L Line	Pass
1**	0.160	36.5	10.29	55.5	19.00	AV	L Line	Pass
2	0.188	49.3	9.49	64.1	14.80	Peak	L Line	Pass
2**	0.188	37.1	9.49	54.1	17.00	AV	L Line	Pass
3	0.424	37.3	8.51	57.4	20.10	Peak	L Line	Pass
3**	0.424	30.4	8.51	47.4	17.00	AV	L Line	Pass
4	2.232	30.7	10.64	56.0	25.30	Peak	L Line	Pass
4**	2.232	20.4	10.64	46.0	25.60	AV	L Line	Pass
5	5.146	40.8	9.76	60.0	19.20	Peak	L Line	Pass
5**	5.146	25.1	9.76	50.0	24.90	AV	L Line	Pass
6	19.706	38.7	10.88	60.0	21.30	Peak	L Line	Pass
6**	19.706	32.2	10.88	50.0	17.80	AV	L Line	Pass

A.2.2 N Phase

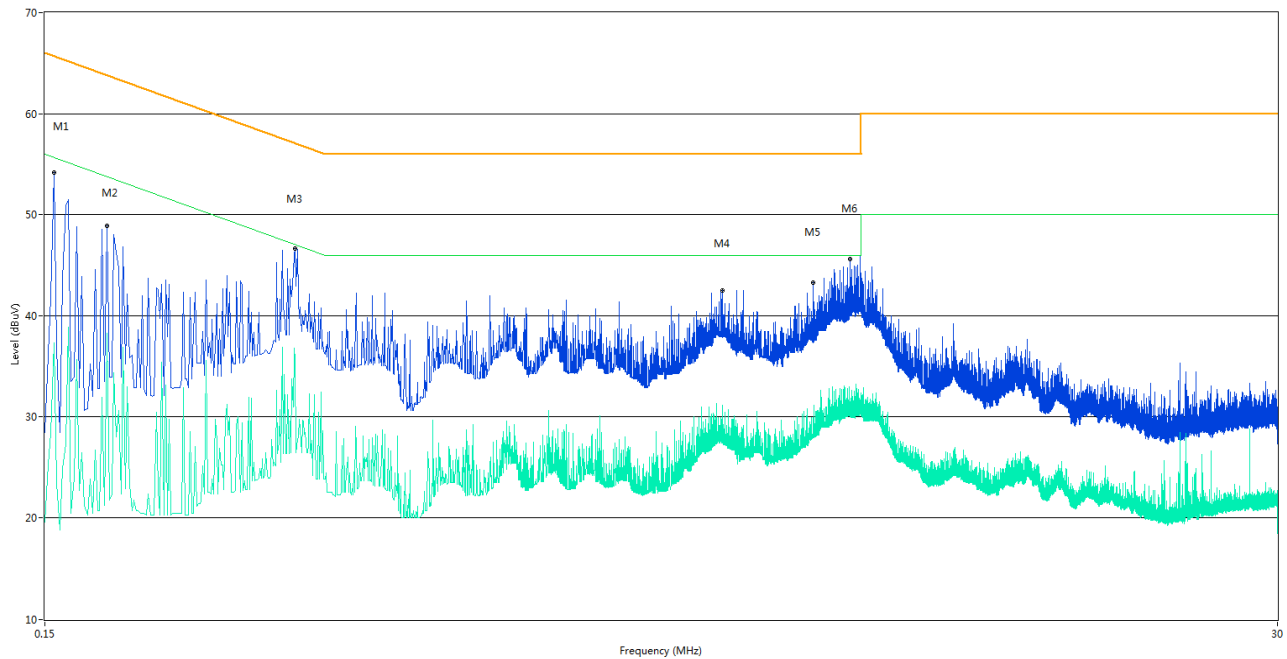


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.152	51.8	9.78	65.9	14.10	Peak	N Line	Pass
1**	0.152	39.3	9.78	55.9	16.60	AV	N Line	Pass
2	0.196	47.1	9.47	63.8	16.70	Peak	N Line	Pass
2**	0.196	34.0	9.47	53.8	19.80	AV	N Line	Pass
3	0.454	33.5	8.99	56.8	23.30	Peak	N Line	Pass
3**	0.454	24.6	8.99	46.8	22.20	AV	N Line	Pass
4	1.028	29.8	9.82	56.0	26.20	Peak	N Line	Pass
4**	1.028	17.7	9.82	46.0	28.30	AV	N Line	Pass
5	4.952	45.1	9.94	56.0	10.90	Peak	N Line	Pass
5**	4.952	31.5	9.94	46.0	14.50	AV	N Line	Pass
6	19.708	41.2	10.85	60.0	18.80	Peak	N Line	Pass
6**	19.708	34.8	10.85	50.0	15.20	AV	N Line	Pass

Test Data and Plots

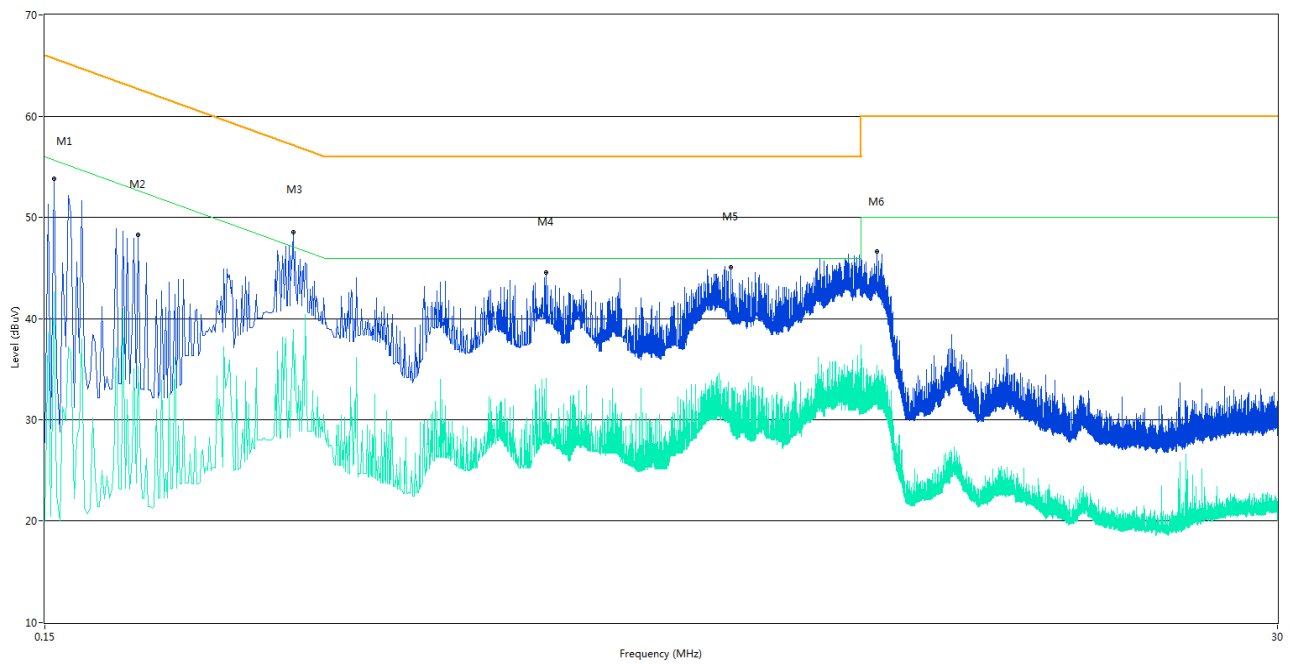
The USB 1 Test Mode (NBS12E050150VU)

A.2.3 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.156	54.2	10.20	65.7	11.50	Peak	L Line	Pass
1**	0.156	37.3	10.20	55.7	18.40	AV	L Line	Pass
2	0.196	48.9	9.47	63.8	14.90	Peak	L Line	Pass
2**	0.196	38.2	9.47	53.8	15.60	AV	L Line	Pass
3	0.440	46.6	10.56	57.1	10.50	Peak	L Line	Pass
3**	0.440	35.6	10.56	47.1	11.50	AV	L Line	Pass
4	2.764	42.5	10.55	56.0	13.50	Peak	L Line	Pass
4**	2.764	31.1	10.55	46.0	14.90	AV	L Line	Pass
5	4.074	43.3	10.48	56.0	12.70	Peak	L Line	Pass
5**	4.074	29.6	10.48	46.0	16.40	AV	L Line	Pass
6	4.782	45.6	10.03	56.0	10.40	Peak	L Line	Pass
6**	4.782	30.0	10.03	46.0	16.00	AV	L Line	Pass

A.2.4 N Phase

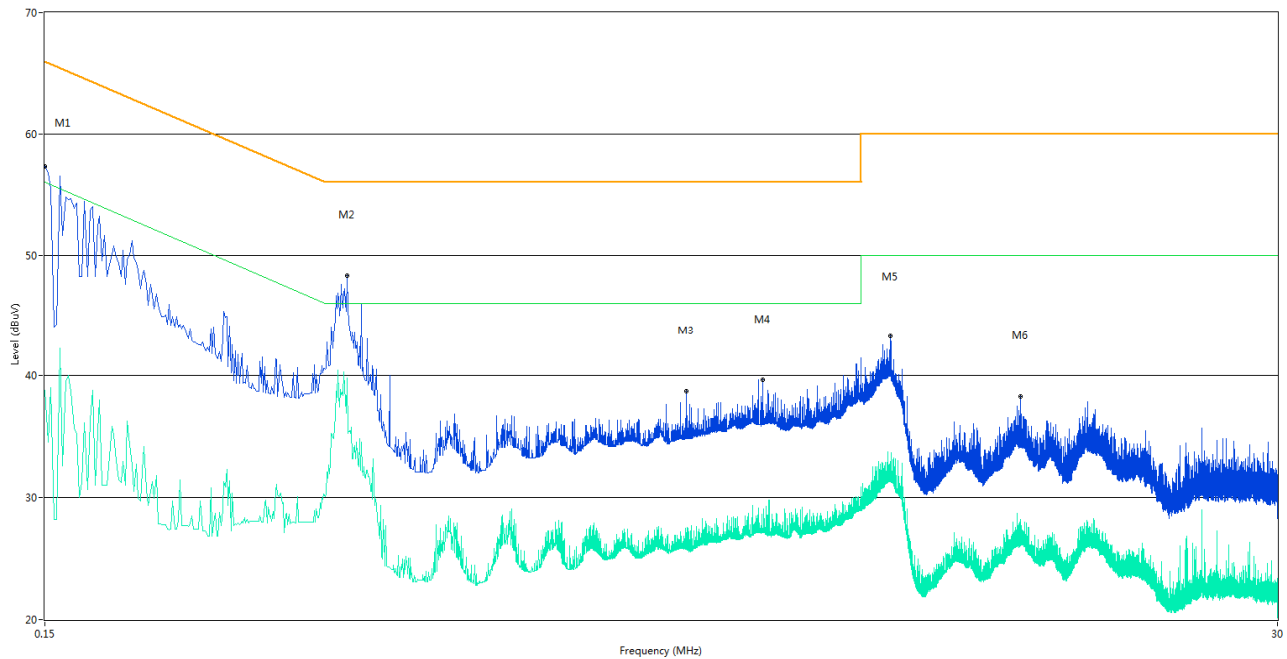


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.156	53.8	10.20	65.7	11.90	Peak	N Line	Pass
1**	0.156	42.7	10.20	55.7	13.00	AV	N Line	Pass
2	0.224	48.3	10.30	62.7	14.40	Peak	N Line	Pass
2**	0.224	35.3	10.30	52.7	17.40	AV	N Line	Pass
3	0.436	48.6	10.62	57.1	8.50	Peak	N Line	Pass
3**	0.436	39.0	10.62	47.1	8.10	AV	N Line	Pass
4	1.292	44.6	10.55	56.0	11.40	Peak	N Line	Pass
4**	1.292	34.1	10.55	46.0	11.90	AV	N Line	Pass
5	2.866	45.1	10.50	56.0	10.90	Peak	N Line	Pass
5**	2.866	30.0	10.50	46.0	16.00	AV	N Line	Pass
6	5.362	46.7	10.24	60.0	13.30	Peak	N Line	Pass
6**	5.362	33.2	10.24	50.0	16.80	AV	N Line	Pass

Test Data and Plots

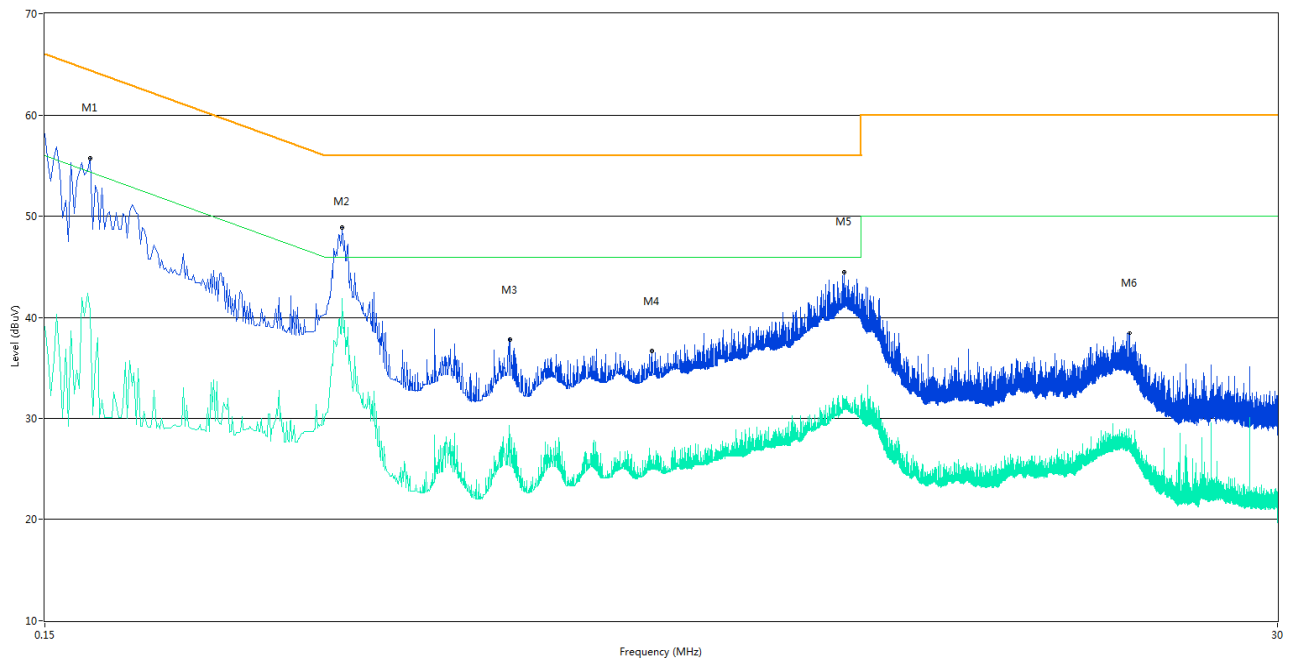
The USB 1 Test Mode (RJ-AS0505150U003-A)

A.2.5 L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.150	57.3	9.70	66.0	8.70	Peak	L Line	Pass
1**	0.150	38.8	9.70	56.0	17.20	AV	L Line	Pass
2	0.550	48.3	9.47	56.0	7.70	Peak	L Line	Pass
2**	0.550	39.8	9.47	46.0	6.20	AV	L Line	Pass
3	2.368	38.8	10.46	56.0	17.20	Peak	L Line	Pass
3**	2.368	26.2	10.46	46.0	19.80	AV	L Line	Pass
4	3.278	39.7	10.40	56.0	16.30	Peak	L Line	Pass
4**	3.278	27.0	10.40	46.0	19.00	AV	L Line	Pass
5	5.684	43.3	9.92	60.0	16.70	Peak	L Line	Pass
5**	5.684	33.0	9.92	50.0	17.00	AV	L Line	Pass
6	9.944	38.3	10.36	60.0	21.70	Peak	L Line	Pass
6**	9.944	28.2	10.36	50.0	21.80	AV	L Line	Pass

A.2.6 N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.182	55.8	10.46	64.4	8.60	Peak	N Line	Pass
1**	0.182	40.7	10.46	54.4	13.70	AV	N Line	Pass
2	0.538	48.9	9.28	56.0	7.10	Peak	N Line	Pass
2**	0.538	41.9	9.28	46.0	4.10	AV	N Line	Pass
3	1.106	37.8	10.28	56.0	18.20	Peak	N Line	Pass
3**	1.106	27.8	10.28	46.0	18.20	AV	N Line	Pass
4	2.042	36.6	10.41	56.0	19.40	Peak	N Line	Pass
4**	2.042	24.6	10.41	46.0	21.40	AV	N Line	Pass
5	4.662	44.5	9.82	56.0	11.50	Peak	N Line	Pass
5**	4.662	30.8	9.82	46.0	15.20	AV	N Line	Pass
6	15.888	38.4	11.55	60.0	21.60	Peak	N Line	Pass
6**	15.888	27.6	11.55	50.0	22.40	AV	N Line	Pass

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ1740210-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ1740210-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ1740210-AI.PDF”.

--END OF REPORT--